Towards Smarter Network Edges for Next Generation Networks

**Friday, 2/10/17 | 11am-12pm | West Hall, W105**

**Speaker:** Dr. Tamer Nadeem  
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**Abstract:** We are approaching a fundamental shift in computational era as the number of smart device users (e.g., smartphone and tablet users) is expected to exceed 4 billion (more than 50% of the global population) by 2017. Given the advancements in microprocessors and the development of more types of connected smart devices, we are seeing the next phase of the Internet populated with traffic primarily from these devices forming what we call Internet of Things (IoT). To cope with the explosion of mobile devices coupled with a growing proliferation of cloud or edge-based applications, best-effort Quality of Service (QoS) is no longer a satisfactory solution and a new breed of intelligent networks is required. In this talk, I present SMILE - SMart and Intelligent wireLess Edge framework that supports SDN-like paradigm at user smart devices and network wireless-edges. SMILE enables us to have greater visibility and control over the traffic generated from smart devices in order to deliver optimal performance to a variety of users and applications. In addition, I present two services FlexStream - an edge-based SDN architecture for programmable and flexible adaptive video streaming, and SafeEnd - an application/flow–aware programmable network security framework for mobile devices, which are developed on top of the flexible and extensible SMILE framework.

**Biography:** Tamer Nadeem is an associate professor in the department of computer science at Old Dominion University (ODU). He received his Ph.D. degree in Computer Science from the University of Maryland, College Park. Prior to joining ODU, he spent few years as a research scientist at Siemens Corporate Research (SCR) in Princeton. Dr. Nadeem leads the Smart Wireless and Mobile Systems (SwimSys) Lab (http://www.cs.swimsys.edu/) at ODU. Dr. Nadeem holds 5 US patents and 10 more pending. He has over 80 publications in peer reviewed scholarly journals and conference proceedings. He has been on the program/organizing committees of several ACM and IEEE conferences. Dr. Nadeem is the recipient of an ODU Early Career Distinguished Research Award for Pre-Tenured Faculty. Dr. Nadeem's research interests are in the areas of wireless management for enterprise networks, vehicular networks, mobile and pervasive computing, cyber physical systems especially intelligent transportation system, cybersecurity, cross layer design mechanisms, and location determination systems. Dr. Nadeem's research has been funded through grants from the National Science Foundation (NSF), National Institute of Standards and Technology (NIST), Federal Highway Administration (FHWA), US Department of Transportation (USDOT), Siemens, Microsoft, Hewlett Packard, and Google. He is a member of the IEEE and ACM.